



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D119-646-041**  
**Job Sheet 177737**



**Part No:** D119-646-041

**Job Qty:** 1 ea

**Part Name:** AW119 Replacement Skidtube with Wearpads - Fits LH or RH



**Part Weight:** 0 lbs

**Status:** Scheduled

**Priority:** Medium

**Job Created:** 5/17/18

**Job Tracking No:**

**Due Date:** 6/11/18

**Created By:** Michelle Gagnon-Donovan

**Type:** SOLD

**Description:**

**Note:** DWG IIN-D119-646 REV D, D3887-041 REV E SHEETS 1,2,5,7,8,10,11 IPP RevA: New issue DD verified by:EC IPP rev B 10.02.22 per PAR 09-043 EC verified by:DD IPP REVC 12.11.05 (DEOD3887-B-1)(ecn 12-675) DD verf:JLM IPP REV:D 13.03.20 per chg003 ECN13-534 DD verf:JLM IPP REV:E 17.05.19 as per dwg D3887 rev.e DD verf:JFS

**Ship Via:**

### Bill of Materials



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
CANADA  
TEL.: 1 813 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com

**Container No:** S082144



**Part:** D119-646-041

**Job No:** 177737

**Serial No/Batch:** S082144

**Revision:**

**Inspector:**

**Exp Date:**

**Instructions:**

**Date:** 06/19/18



| Job Routing |                    |       |            |          |           |         |                       |           |          |
|-------------|--------------------|-------|------------|----------|-----------|---------|-----------------------|-----------|----------|
| Op No       | Operation          | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off |
|             |                    |       |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |          |
| 90          | Start up Operation | 1 Ea  | 6/11/18    | 6/11/18  | 0.00      | 0.00    | Start Up Skid tubes-1 |           |          |
| 110         | Skid tubes         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.25    | Skid tubes-1          |           |          |
| 120         | HandFinish         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.83    | HandFinish1           |           |          |
| 121         | QC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC7-1                 |           |          |
| 122         | QC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC5                   |           |          |
| 130         | Skid tubes         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 1.54    | Skid tubes-1          |           |          |
| 135         | QC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC5                   |           |          |
| 140         | Skid tubes         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 1.47    | Skid tubes-1          |           |          |
| 150         | QC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC5                   |           |          |
| 160         | Skid tubes         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 1.61    | Skid tubes-1          |           |          |
| 170         | QC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC5                   |           |          |
| 180         | QC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC10                  |           |          |
| 190         | HandFinish         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.83    | HandFinish2           |           |          |
| 200         | Powdercoat         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.22    | Powdercoat1           |           |          |
| 210         | QC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC3                   |           |          |
| 220         | HandFinish         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 3.83    | HandFinish4           |           |          |
| 240         | HandFinish         | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 2.00    | HandFinish4           |           |          |
| 245         | QC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC5                   |           |          |
| 255         | DC                 | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | DC                    |           |          |
| 260         | Packaging          | 1 pcs | 6/11/18    | 6/11/18  | 0.00      | 0.00    | Packaging3-1          |           |          |
| 270         | QC21-FG            | 1 Ea  | 6/11/18    | 6/11/18  | 0.00      | 0.00    | QC21                  |           |          |

Part Op 110 - 1- inspect Mat'L D2500-1-190 for damage 2-Cut tube to length as per dwg D3887 (154.8") 3- Ensure squareness of Descriptions: ends and scribe batch#

130 - 1- Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill first side only. 2- 2nd side, locating from first saddle holes use DT9861 A/B to drill 2nd side fwd saddle holes. 3- 2nd side locating from fwd saddle drill remaining crossbolt spacer holes using DT9477 4- Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) \*\*\*DO NOT OPEN FWD Saddles Holes\*\*\* 5- Deburr, blow out chips from inside of tube. 6- Bond web in place as per Dwg D3887 & QSI 015. A/R

140 - 1- Bend FWD end of tube using bender 1 and FOLIO 31 bend prog. D3887. \*\*\*Must use bending aid DT9544, ensure proper positioning\*\*\* 2- Cut FWD end of tube as per dwg D3887. \*\*\*Verify measurement\*\*\* 3- Buff out marks left from bending 4- Drill FWD cap holes using DT8215. Open FWD & AFT cap holes to 0.208" 5- Open FWD saddle holes to finished size as per dwg D3887 6- Drill FWD x-bolt spacer holes using DT9816 and open to finished size. (verify measurement) 7- Drill Tow ring hole, using DT10047 locate from FWD saddle hole. (verify measurement). Open to finished size. 8- Drill 1.87" and 3.74 holes using DT10045 A&B locate from FWD saddle hole. (verify measurement) as per dwg. 9- C-sink FWD cap hole as per detail "C" 10- Drill holes for wearpads using DT8931, open to 0.297". 11- Countersink crossbolt spacer holes, and prepare tube for welding, deburr. 12- Deburr and blow out chips from inside of tube.

160 - NOTE: TACK IN 2 MOST FWD X-BOLT SPACERS AND TEST FIT FWD GROUND HANDLING FIXTURE, IF FIXTURE FITS WELL THEN PROCEED. FIXTURE DT10091. 1- Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod A/R 2- Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole. 3- Counterbore 5/16" x 0.750" deep as per Dwg D3887. 4- Deburr & Scribe batch # on Aft end of tube.

170 - TEST FIT USING FIXTURE DT10091.

190 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

200 - \*\*\*MASK AREA SHOWN ON SHEET 7, NOTE 9\*\*\* START TIME: 11:30 OVEN TEMPERATURE:

FINISH TIME: 12:00

220 - 1- Install inserts as per Dwg D3887.

240 - 1- Install inserts as per Dwg D3887. 2- Install wearpads, gaskets as per Dwg D3887. Put sikaflex in insert before installing bolts and washers A/R Sikaflex-240/-291 M13887J Sikaflex expire date: 19106 3- assemble o-ring to plug as per dwg D3492 and apply o-ring lube A/R 55-o-ring lube batch: M139843 4- Inspect for foreign objects as per QSI 024 5- Install D2855-3 Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 M13887J Sikaflex expire date: 16-9 6- Install insert in D2855- Cap. Install cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 M13887J Sikaflex expire date: 19-06 7- Wing Walk as per dwg and QSI Batch: M13887J

255 - Photocopy bluefile & type labels per PPP D119-646-041 CHG004



| Job BOM       |                        |               |                       |           | 00548d |
|---------------|------------------------|---------------|-----------------------|-----------|--------|
| Part / Item   | Component Name         | Quantity      | Operation             | Container |        |
| D2500-1-190   | Ext'n -1' Beam Tube 4" | 1 Ea (1 ea)   | 90-Start up Operation | 5081201   |        |
| D2579         | Crossbolt Spacer       | 2 Ea (2 ea)   | 140-Skidtubes         | 5051552   |        |
| D3885-1       | Standard Web           | 1 Ea (1 ea)   | 140-Skidtubes         | 3082670   |        |
| D2855-5       | Cap                    | 1 Ea (1 ea)   | 160-Skidtubes         | 5002078   |        |
| D3681-1       | Spacer                 | 12 Ea (12 ea) | 160-Skidtubes         | 3084724   |        |
| D3903-1       | Spacer                 | 12 Ea (12 ea) | 160-Skidtubes         | 5084653   |        |
| ALS4-1032-130 | Rivnut                 | 33 Ea (33 ea) | 240-HandFinish        | 5007274   |        |
| ALS4-1032-225 | Rivnut                 | 1 Ea (1 ea)   | 240-HandFinish        | 5058139   |        |
| AN3C4A        | Bolt                   | 6 Ea (6 ea)   | 240-HandFinish        | 5095222   |        |
| AN3C5A        | Bolt                   | 26 Ea (26 ea) | 240-HandFinish        | 5095214   |        |
| D2855-3       | Cap                    | 1 Ea (1 ea)   | 240-HandFinish        | 5066002   |        |
| D3492-5       | Plug                   | 24 Ea (24 ea) | 240-HandFinish        | 5102813   |        |
| D3672-1       | Washer, Phenolic       | 2 Ea (2 ea)   | 240-HandFinish        | 5163255-1 |        |
| D3847-1       | Wearpad                | 5 Ea (5 ea)   | 240-HandFinish        | 5084440   |        |
| D3847-11      | Wearpad                | 1 Ea (1 ea)   | 240-HandFinish        | 5058269   |        |
| MS24694-C52   | Screw                  | 2 Ea (2 ea)   | 240-HandFinish        | 5067269-1 |        |
| NAS1149C0332R | Washer                 | 32 Ea (32 ea) | 240-HandFinish        | 5071663   |        |
| NAS1611-005   | O-Ring                 | 24 Ea (24 ea) | 240-HandFinish        | 5057657   |        |

| Job Allocations       |                |          |           |           |  |
|-----------------------|----------------|----------|-----------|-----------|--|
| Operation             | Component Part | Required | Inventory | Allocated |  |
| 90-Start up Operation | D2500-1-190    | 1        | 45        | 0         |  |
| 140-Skidtubes         | D2579          | 2        | 133       | 0         |  |
|                       | D3885-1        | 1        | 7         | 0         |  |
| 160-Skidtubes         | D2855-5        | 1        | 85        | 0         |  |
|                       | D3681-1        | 12       | 93        | 0         |  |
|                       | D3903-1        | 12       | 43        | 0         |  |
| 240-HandFinish        | ALS4-1032-130  | 33       | 14,156    | 0         |  |
|                       | ALS4-1032-225  | 1        | 5,405     | 0         |  |
|                       | AN3C4A         | 6        | 2,369     | 0         |  |
|                       | AN3C5A         | 26       | 1,802     | 0         |  |
|                       | D2855-3        | 1        | 30        | 0         |  |
|                       | D3492-5        | 24       | 234       | 0         |  |
|                       | D3672-1        | 2        | 1,059     | 0         |  |
|                       | D3847-1        | 5        | 58        | 0         |  |
|                       | D3847-11       | 1        | 26        | 0         |  |
|                       | MS24694-C52    | 2        | 184       | 0         |  |
|                       | NAS1149C0332R  | 32       | 7,418     | 0         |  |
|                       | NAS1611-005    | 24       | 663       | 0         |  |

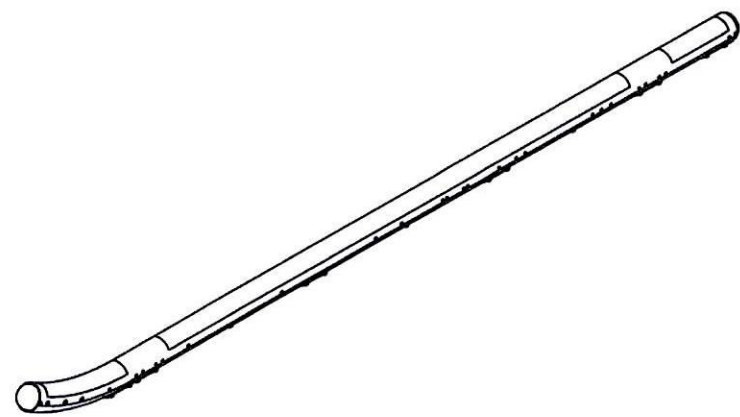
  

| Part Specifications                |  |
|------------------------------------|--|
| Specifications could not be found. |  |

Plex 5/17/18 11:27 AM Dart.Gagnon.Michelle

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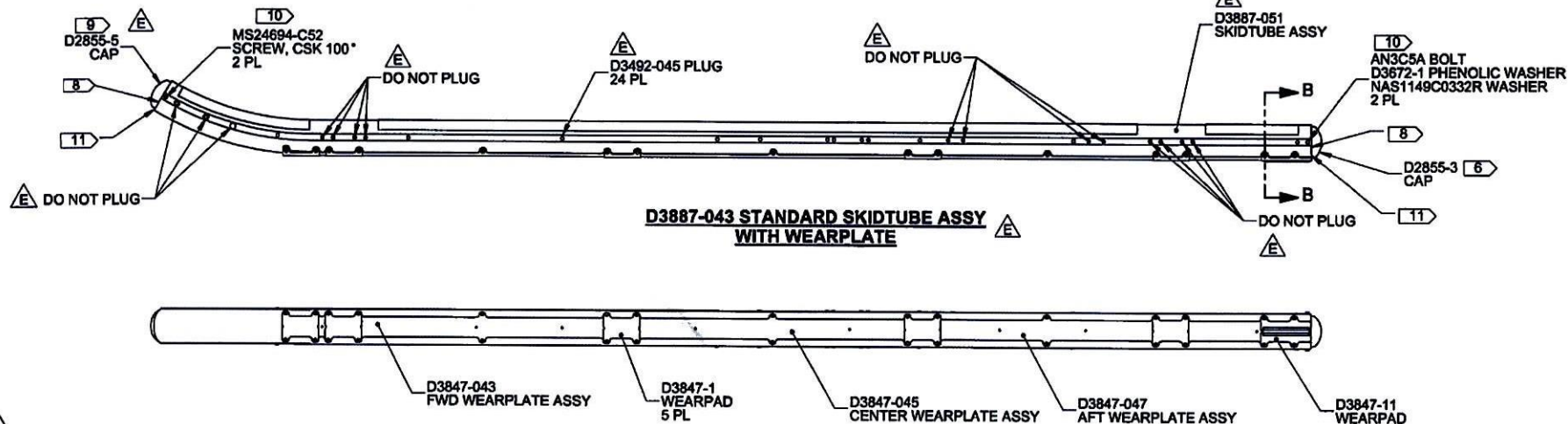
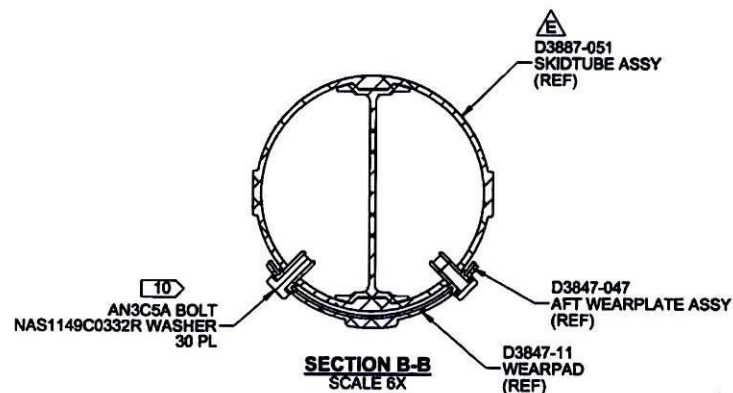
**D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD(SHOWN)**  
**D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)**  
**D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)**

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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|   | COMPLETE REDRAW, ADDED ASSY DETAILS -3, -051 & -053, SEE PREVIOUS REV. FOR DETAIL. POWDER COAT REMOVED FROM SADDLE AREA SEE DETAIL F, REF PART15-421. ADDED STRUCTURAL PROVISIONS TO ALLOW FOR THE INSTALLATION OF THE D119-648-313/314 SKIDTUBE PROTECTOR KIT, REF PART17-577. CHANGE QTY OF D2855-3, ADDED D2855-5 CAP ASSEMBLIES, ADDED INSTRUCTIONS TO LOCATE INSERT HOLE FOR D2855-5 CAP, REF PART17-583                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| D | REVISED BEND TOLERANCES FOR MANUFACTURABILITY, 135.07 WAS 134.04 (ZN D5-8), ADD 5.07 (ZN C2-8), ADD 116.8 (ZN D5-8), DELETE GASKETS (BOM, SH 2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DB       | 13.09.20 |
| C | (SHT1, P/L, ZN C2-2, C3-2, C4-2) ITEM 13, QTY 2 WAS 4, ITEM 42, QTY 32 WAS 34, ITEM 44, QTY 30 WAS 32, ADD ITEM 46, MS24694-C32 WAS AN3CSA, 2 PLCS (ZN C1-5, C1-6, B4-7) 0.021 THRU, ADD DETAIL F (ZN C5-5, C5-6, B5-7), ADD ITEM 10, D2579 CROSS BOLT SPACER (ZN D4-1, A6-7)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DB       | 13.02.19 |
| B | ALS4-1032-130 WAS AELS-1032-130 (ZN C4-1, C5-7, C3-7); ADD DT8831 (ZN A6-1); ADD 134.04 (ZN C4-8); D2855-3 WAS D2575 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4); AN3CSA WAS AN3CSA (ZN C5-2, C5-3, C5-4, C5-5, C5-6, C5-7, C5-8, C5-9, C5-10, C5-11, C5-12, C5-13, C5-14, C5-15, C5-16, C5-17, C5-18, C5-19, C5-20, C5-21, C5-22, C5-23, C5-24, C5-25, C5-26, C5-27, C5-28, C5-29, C5-30, C5-31, C5-32, C5-33, C5-34, C5-35, C5-36, C5-37, C5-38, C5-39, C5-40, C5-41, C5-42, C5-43, C5-44, C5-45, C5-46, C5-47, C5-48, C5-49, C5-50, C5-51, C5-52, C5-53, C5-54, C5-55, C5-56, C5-57, C5-58, C5-59, C5-60, C5-61, C5-62, C5-63, C5-64, C5-65, C5-66, C5-67, C5-68, C5-69, C5-70, C5-71, C5-72, C5-73, C5-74, C5-75, C5-76, C5-77, C5-78, C5-79, C5-80, C5-81, C5-82, C5-83, C5-84, C5-85, C5-86, C5-87, C5-88, C5-89, C5-90, C5-91, C5-92, C5-93, C5-94, C5-95, C5-96, C5-97, C5-98, C5-99, C5-100, C5-101, C5-102, C5-103, C5-104, C5-105, C5-106, C5-107, C5-108, C5-109, C5-110, C5-111, C5-112, C5-113, C5-114, C5-115, 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| ITEM | QTY<br>-043 | P/N           | DESCRIPTION                           |
|------|-------------|---------------|---------------------------------------|
|      | X           | D3887-043     | STANDARD SKIDTUBE ASSY WITH WEARPLATE |
| 1    | 1           | D2855-3       | CAP ASSY                              |
| 2    | 1           | D2855-5       | CAP ASSY                              |
| 3    | 24          | D3492-045     | PLUG ASSY                             |
| 4    | 2           | D3672-1       | PHENOLIC WASHER                       |
| 5    | 1           | D3847-043     | FWD WEARPLATE ASSY                    |
| 6    | 1           | D3847-045     | CENTER WEARPLATE ASSY                 |
| 7    | 1           | D3847-047     | AFT WEARPLATE ASSY                    |
| 8    | 5           | D3847-1       | WEARPAD                               |
| 9    | 1           | D3847-11      | WEARPAD                               |
| 10   | 1           | D3887-051     | SKIDTUBE ASSY                         |
| 11   | 1           | ALS4-1032-225 | INSERT                                |
| 12   | 32          | AN3C5A        | BOLT                                  |
| 13   | 2           | MS24694-C52   | SCREW, CSK 100"                       |
| 14   | 32          | NAS1149C0332R | WASHER                                |



#### NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-043" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 37.0 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3887-051 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO Ø0.297, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

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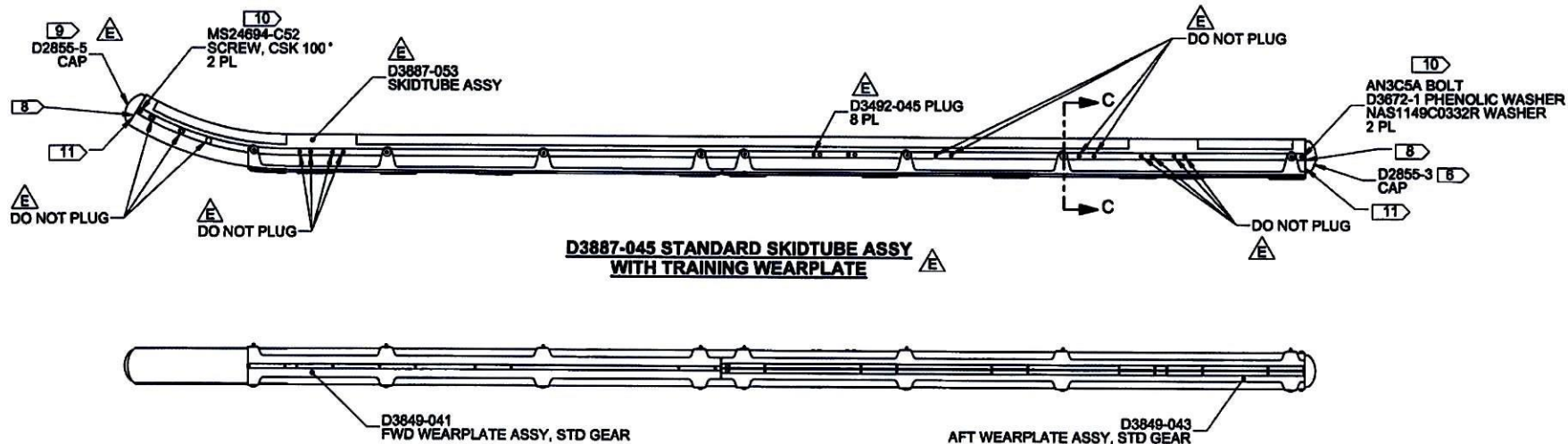
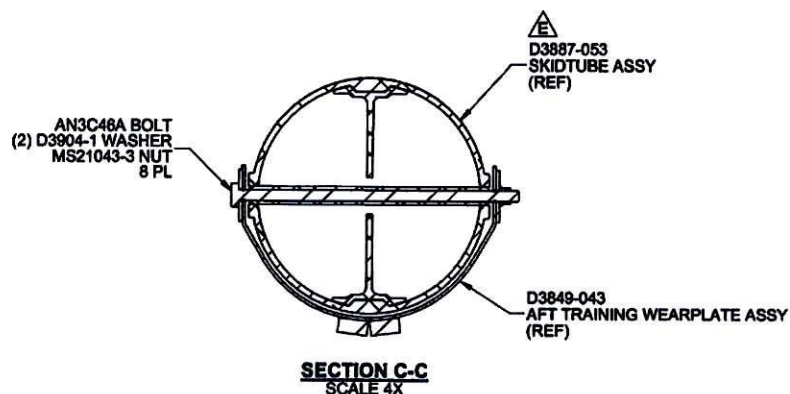
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| DRAWN      | WK       |
| CHECKED    | RF       |
| MFG. APPR. | DD       |
| APPROVED   | HS       |
| DE APPR.   | DS       |
| DATE       | 17.02.03 |

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EUGENE, OR

|                        |               |
|------------------------|---------------|
| DRAWING NO.            | REV. E        |
| D3887                  | SHEET 3 OF 11 |
| TITLE                  | SCALE         |
| A119 STD SKIDTUBE ASSY | NTS           |

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| ITEM | QTY<br>-045 | P/N           | DESCRIPTION                                    |
|------|-------------|---------------|------------------------------------------------|
|      | X           | D3887-045     | STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE |
| 1    | 1           | D2855-3       | CAP ASSY                                       |
| 2    | 1           | D2855-5       | CAP ASSY                                       |
| 3    | 8           | D3492-045     | PLUG                                           |
| 4    | 2           | D3672-1       | PHENOLIC WASHER                                |
| 5    | 1           | D3849-041     | FWD WEARPLATE ASSY, STD GEAR                   |
| 6    | 1           | D3849-043     | AFT WEARPLATE ASSY, STD GEAR                   |
| 7    | 1           | D3887-053     | SKIDTUBE ASSY                                  |
| 8    | 16          | D3904-1       | WASHER                                         |
| 9    | 1           | ALS4-1032-225 | INSERT                                         |
| 10   | 8           | AN3C46A       | BOLT                                           |
| 11   | 2           | AN3C5A        | BOLT                                           |
| 12   | 8           | MS21043-3     | NUT, SELF-LOCKING                              |
| 13   | 2           | MS24694-C52   | SCREW, CSK 100°                                |
| 14   | 2           | NAS1149C0332R | WASHER                                         |



#### NOTES:

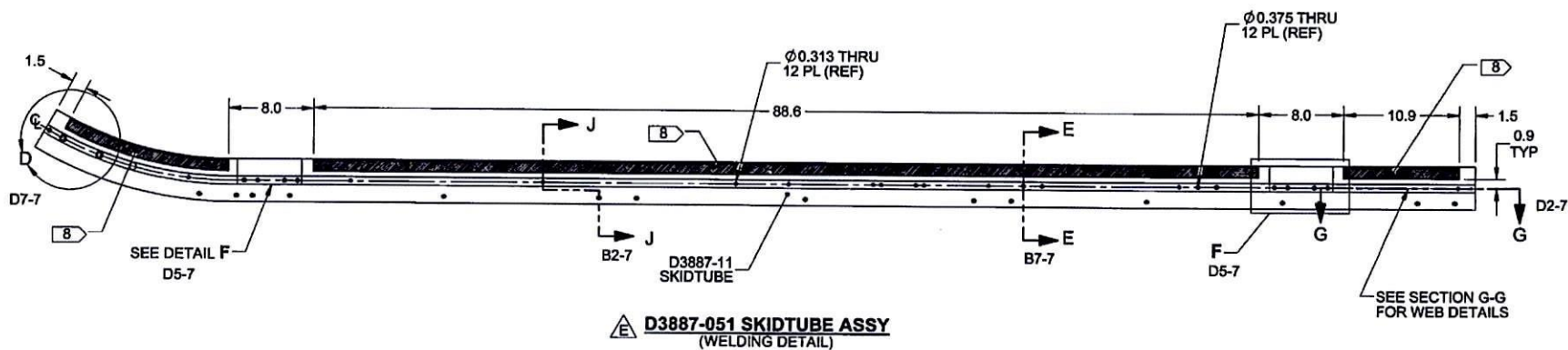
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-045" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 38.1 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3887-053 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP. OPEN HOLE TO Ø0.297, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

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2017-05-08

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------|---------------|
| DESIGN                                                                                                                                                                                                                                   | RF       | DART AEROSPACE USA, INC.                     |               |
| DRAWN                                                                                                                                                                                                                                    | WK       | EUGENE, OR                                   |               |
| CHECKED                                                                                                                                                                                                                                  | RF       | DRAWING NO.                                  | REV. E        |
| MFG. APPR.                                                                                                                                                                                                                               | DD       | D3887                                        | SHEET 4 OF 11 |
| APPROVED                                                                                                                                                                                                                                 | HS       | TITLE                                        | SCALE         |
| DE APPR.                                                                                                                                                                                                                                 | DS       | A119 STD SKIDTUBE ASSY                       | NTS           |
| DATE                                                                                                                                                                                                                                     | 17.02.03 | COPYRIGHT © 2008 BY DART AEROSPACE USA, INC. |               |
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| ITEM | QTY<br>-051 | P/N           | DESCRIPTION       |
|------|-------------|---------------|-------------------|
|      | X           | D3887-051     | SKIDTUBE ASSY     |
| 1    | 2           | D2579         | CROSS BOLT SPACER |
| 2    | 12          | D3681-1       | CROSS BOLT SPACER |
| 3    | 1           | D3885-1       | STANDARD WEB      |
| 4    | 1           | D3887-11      | SKIDTUBE          |
| 5    | 12          | D3903-1       | CROSS BOLT SPACER |
| 6    | 30          | ALS4-1032-130 | INSERT            |



# NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
- 7) WEIGHT: N/A
- 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50 ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

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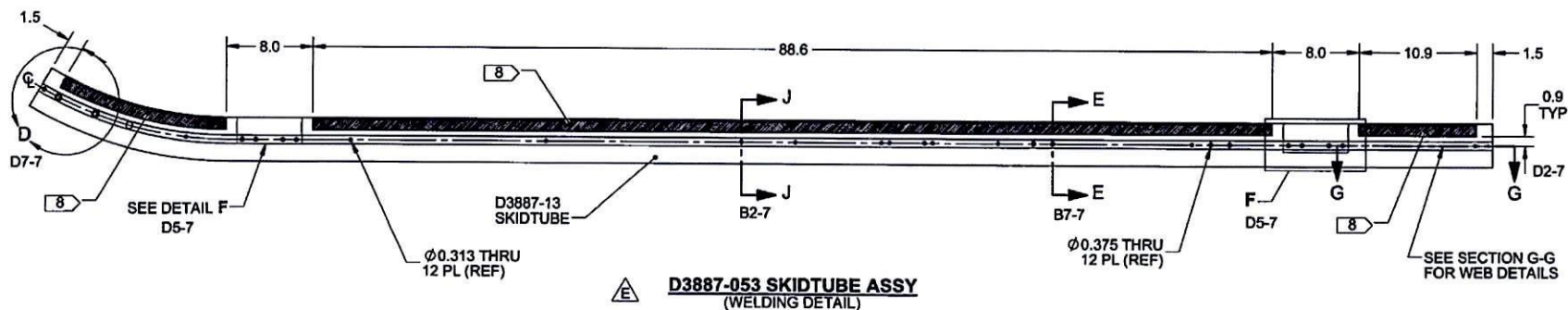
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| DESIGN     | RF       | <b>DART AEROSPACE USA, INC.</b>     |
| DRAWN      | WK       | EUGENE, OR                          |
| CHECKED    | RF       | DRAWING NO. <b>D3887</b>            |
| MFG. APPR. | DD       | REV. E                              |
| APPROVED   | HS       | TITLE <b>A119 STD SKIDTUBE ASSY</b> |
| DE APPR.   | DS       | SHEET 5 OF 11                       |
| DATE       | 17.02.03 | SCALE NTS                           |

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| ITEM | QTY<br>-053 | P/N       | DESCRIPTION       |
|------|-------------|-----------|-------------------|
|      | X           | D3887-053 | SKIDTUBE ASSY     |
| 1    | 2           | D2579     | CROSS BOLT SPACER |
| 2    | 12          | D3881-1   | CROSS BOLT SPACER |
| 3    | 1           | D3885-1   | STANDARD WEB      |
| 4    | 1           | D3887-13  | SKIDTUBE          |
| 5    | 12          | D3903-1   | CROSS BOLT SPACER |



**D3887-053 SKIDTUBE ASSY**  
(WELDING DETAIL)

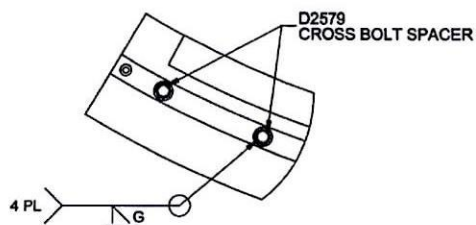
**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
- 7) WEIGHT: N/A
- 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50 ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

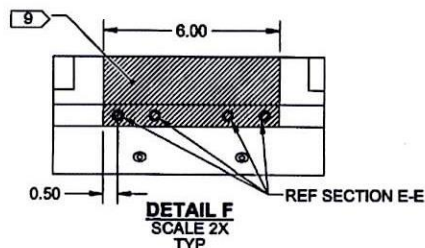
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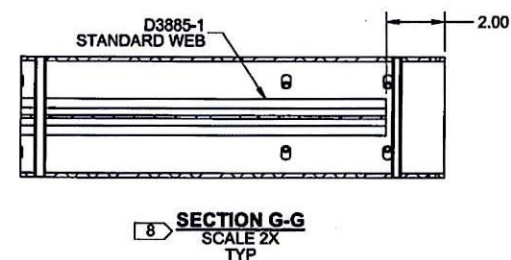
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| DESIGN     | RF       | <b>DART AEROSPACE USA, INC.</b>                                                                                                                                                                                                                             |               |
| DRAWN      | WK       | EUGENE, OR                                                                                                                                                                                                                                                  |               |
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| MFG. APPR. | DD       | D3887                                                                                                                                                                                                                                                       | SHEET 6 OF 11 |
| APPROVED   | HS       | TITLE                                                                                                                                                                                                                                                       | SCALE         |
| DE APPR.   | DS       | A119 STD SKIDTUBE ASSY                                                                                                                                                                                                                                      | NTS           |
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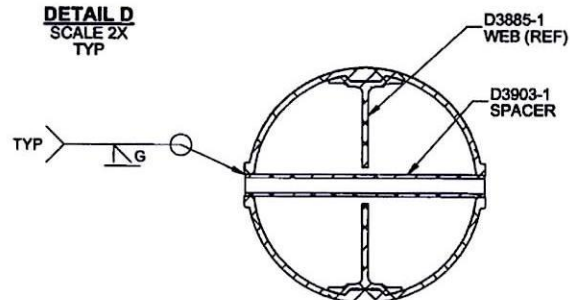
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SCALE 2X  
TYP



**DETAIL F**  
SCALE 2X  
TYP

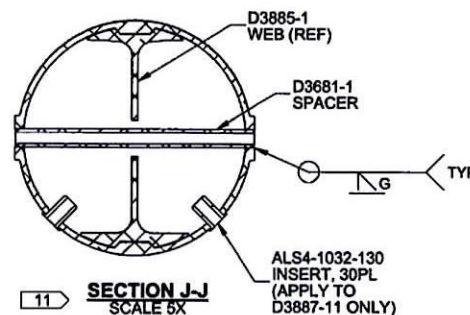


**SECTION G-G**  
SCALE 2X  
TYP



**SECTION E-E**  
SCALE 5X  
TYP

(FOR 12X  $\phi 0.375$  HOLES  
PER SKIDTUBE)



**SECTION J-J**  
SCALE 5X  
TYP

(FOR 12X  $\phi 0.313$  HOLES  
PER SKIDTUBE)

**NOTES:**

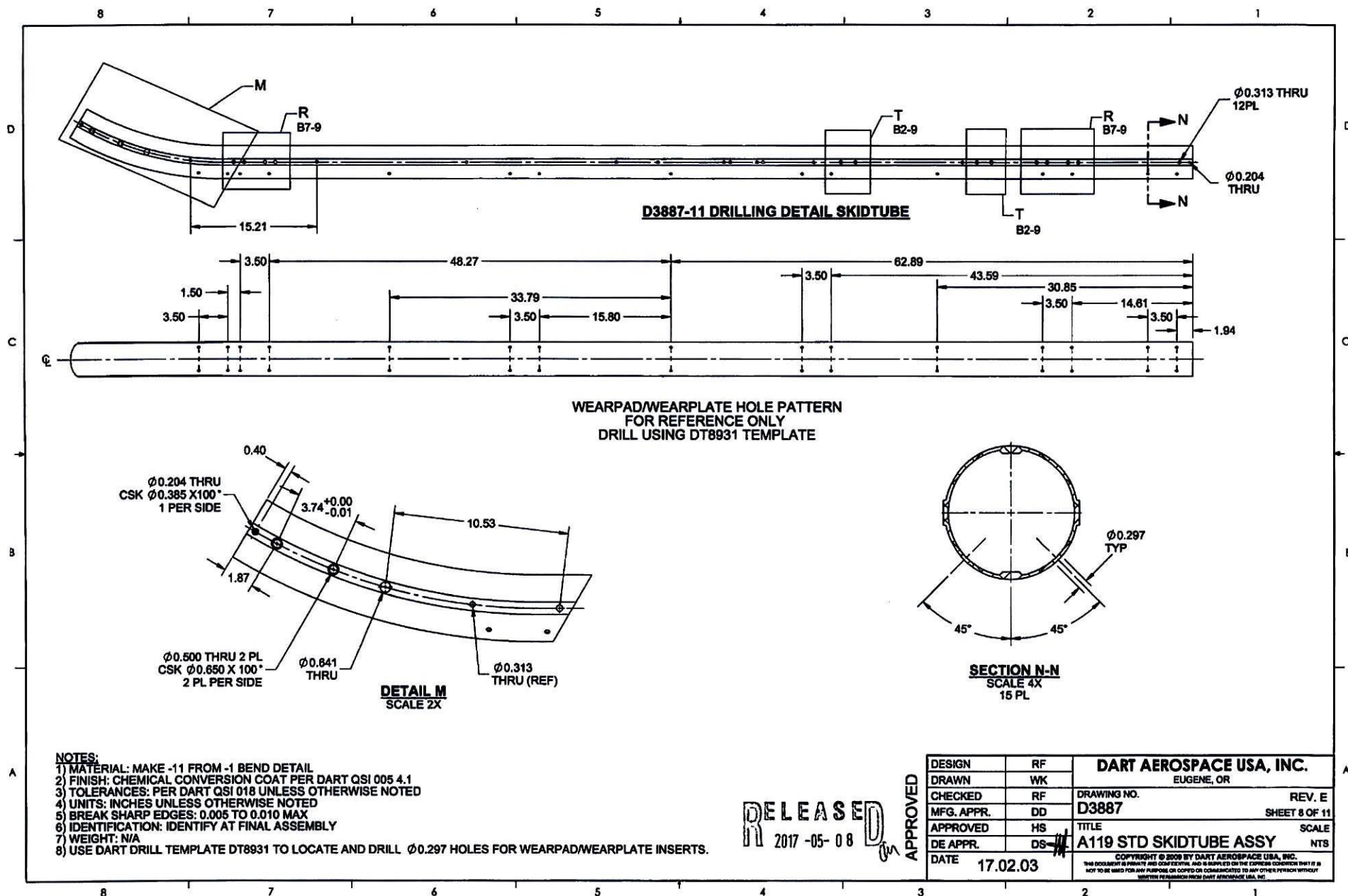
- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING. ENSURE HOLES LINE-UP
- 9) MASK THIS AREA AND DO NOT POWDER COAT
- 10) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION E-E  $\phi 0.375$  HOLES ONLY:
  - i) CHAMFER HOLES  $\phi 0.475 \times 45^\circ$
  - ii) INSERT D3903-1 SPACER
  - iii) WELD INTO PLACE AND GRIND FLUSH
  - iv) C'BORE TO  $\phi 0.313 \times 0.75$  DEEP
  - v) DEBURR HOLES
- 11) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION J-J  $\phi 0.313$  HOLES ONLY:
  - i) CHAMFER HOLES  $\phi 0.354 \times 45^\circ$  OR  $0.050$  DEEP  $\times 45^\circ$  (BOTH SIDES)
  - ii) INSERT D3681-1 SPACER
  - iii) WELD INTO PLACE AND GRIND FLUSH
  - iv) DEBURR HOLES
- 12) WELD PER DART QSI 004

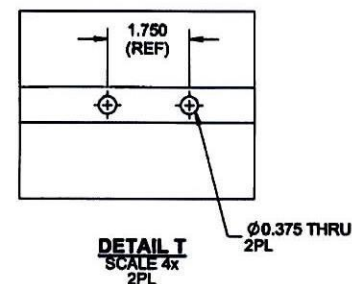
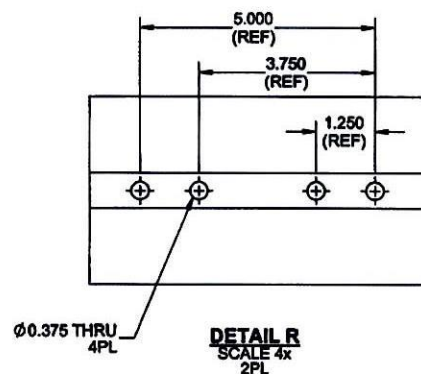
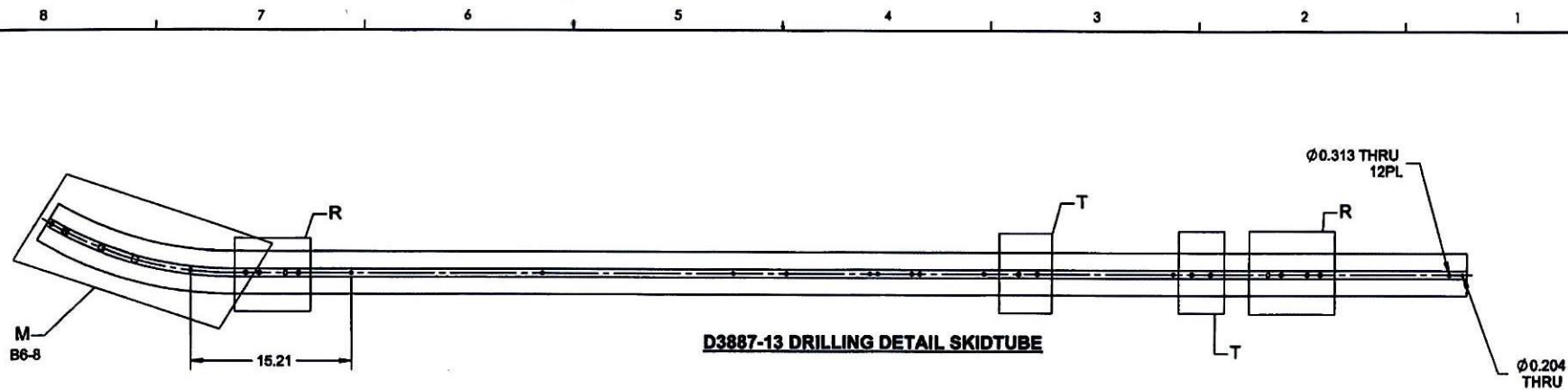
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| MFG. APPR.                                                                                                                                                                                                                | DD       | <b>D3887</b>                                 | SHEET 7 OF 11 |
| APPROVED                                                                                                                                                                                                                  | HS       | TITLE                                        | SCALE         |
| DE APPR.                                                                                                                                                                                                                  | DS       | <b>A119 STD SKIDTUBE ASSY</b>                | NTS           |
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# NOTES:

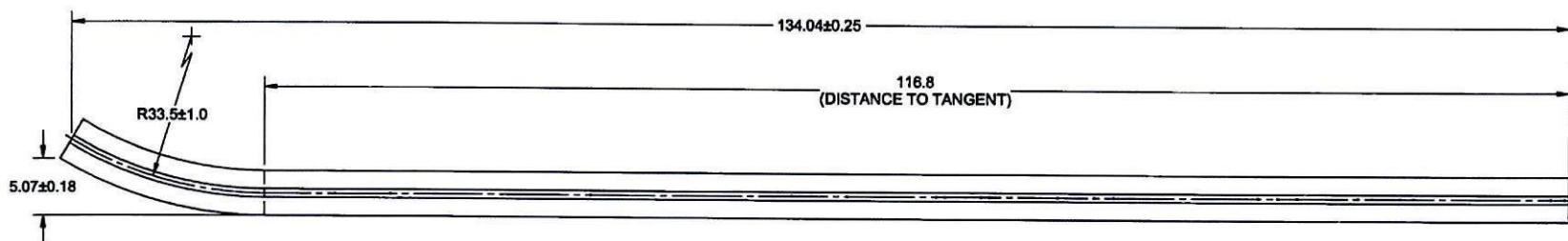
- 1) MATERIAL: MAKE -13 FROM -1 BEND DETAIL
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A

RELEASED  
2017-05-08

APPROVED

|            |          |                                                                                                                                                                                                                                                                               |               |
|------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| DESIGN     | RF       | DART AEROSPACE USA, INC.                                                                                                                                                                                                                                                      |               |
| DRAWN      | WK       | EUGENE, OR                                                                                                                                                                                                                                                                    |               |
| CHECKED    | RF       | DRAWING NO.                                                                                                                                                                                                                                                                   | REV. E        |
| MFG. APPR. | DD       | D3887                                                                                                                                                                                                                                                                         | SHEET 9 OF 11 |
| APPROVED   | HS       | TITLE                                                                                                                                                                                                                                                                         | SCALE         |
| DE APPR.   | DS       | A119 STD SKIDTUBE ASSY                                                                                                                                                                                                                                                        | NTS           |
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**D3887-1 BEND DETAIL SKIDTUBE**

**NOTES:**

- 1) MATERIAL: MAKE -1 BEND DETAIL FROM -3 PILOT HOLE DETAIL
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A
- 8) DAMAGE TOLERANCE ON FWD BEND:

THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.

RELEASE  
2017-05-08

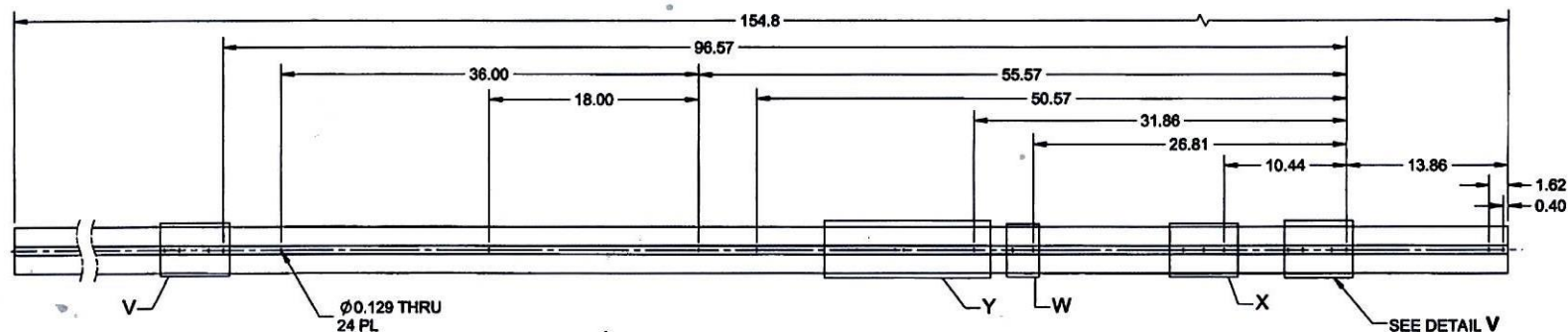
APPROVED

|            |  |          |                                        |                |
|------------|--|----------|----------------------------------------|----------------|
| DESIGN     |  | RF       | <b>DART AEROSPACE USA, INC.</b>        |                |
| DRAWN      |  | WK       | EUGENE, OR                             |                |
| CHECKED    |  | RF       | DRAWING NO.<br><b>D3887</b>            | REV. E         |
| MFG. APPR. |  | DD       |                                        | SHEET 10 OF 11 |
| APPROVED   |  | HS       | TITLE<br><b>A119 STD SKIDTUBE ASSY</b> | SCALE          |
| DE APPR.   |  | DS       |                                        | NTS            |
| DATE       |  | 17.02.03 |                                        |                |

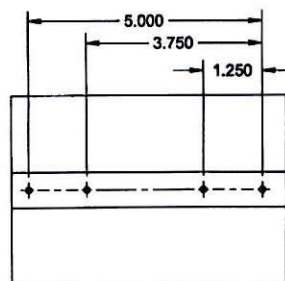
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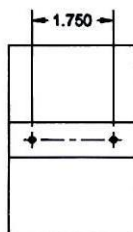
8 7 6 5 4 3 2 1



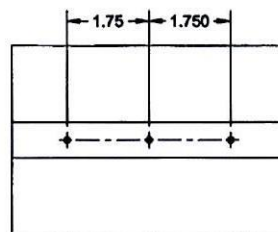
**D3887-3 PILOT HOLE DETAIL SKIDTUBE**



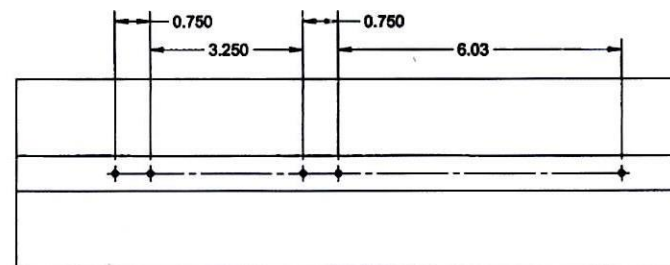
**DETAIL V**  
SCALE 4X  
2 PL



**DETAIL W**  
SCALE 4X



**DETAIL X**  
SCALE 4X



**DETAIL Y**  
SCALE 4X

- NOTES:**  
 1) MATERIAL: MAKE FROM D2500-1-190 EXTRUSION  
 2) FINISH: N/A  
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED  
 4) UNITS: INCHES UNLESS OTHERWISE NOTED  
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX  
 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY  
 7) WEIGHT: N/A

**RELEASED**  
2017-05-08

**APPROVED**

|            |          |                                                                                                                                                                                                                                                                                                                  |                |
|------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| DESIGN     | RF       | <b>DART AEROSPACE USA, INC.</b>                                                                                                                                                                                                                                                                                  |                |
| DRAWN      | WK       | EUGENE, OR                                                                                                                                                                                                                                                                                                       |                |
| CHECKED    | RF       | DRAWING NO.                                                                                                                                                                                                                                                                                                      | REV. E         |
| MFG. APPR. | DD       | D3887                                                                                                                                                                                                                                                                                                            | SHEET 11 OF 11 |
| APPROVED   | HS       | TITLE                                                                                                                                                                                                                                                                                                            | SCALE          |
| DE APPR.   | DS       | A119 STD SKIDTUBE ASSY                                                                                                                                                                                                                                                                                           | NTS            |
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8 7 6 5 4 3 2 1